~~SECRET~~
~~NOFORN~~

Despite widespread media publicity in 1975, almost all aspects of the Hughes Glomar Explorer *project are still classified, and it is important that they remain so. The widespread publicity has contained much fact and extensive error. It remains important* (b)(1) *to protect sources and methods which may have future application.*

In the course of continuing litigation related to the project—principally concerning California State tax liability, Freedom of Information Act matters, and a patent infringement claim—several facts about the Glomar Explorer *project have been acknowledged in court by the U.S. Government. These include the fact of CIA sponsorship of the project for "intelligence collection purposes," the participation of Hughes Tool Company, the Summa Corporation, and Global Marine, Inc.; and the actions of senior CIA officials in 1975 to attempt to persuade members of the media not to broadcast or publish reports concerning the project. Beyond these few details, however, it is still firm U.S. Government policy that nothing further about the project is to be said or acknowledged. This prohibition was recently reaffirmed by the President's Advisor for National Security Affairs, the Secretaries of State and Defense, and the DCI. It applies particularly to the specific purpose of the AZORIAN mission; the degree of success; operational details; participation of other contractors, government organizations, and individuals; classified technology; and project funding matters.*

The following article is being published because it now is possible to discuss most of the foregoing matters and other classified project details at the SECRET NOFORN level rather than in the TOP SECRET compartmentation which previously applied to all aspects of the AZORIAN project. Nevertheless, there has been no relaxation of the necessity to keep most of the details of the AZORIAN project classified for the foreseeable future.

PROJECT AZORIAN:
THE STORY OF THE *HUGHES GLOMAR EXPLORER*

(b)(3)(c)

In March 1968 a Soviet submarine of the G-II class was lost with all hands, 16,500 feet below the surface of the Pacific Ocean.

On 8 August 1974 (b)(1) that submarine was brought to the surface in (b)(1) a recovery system designed and developed specifically for that mission.

The story of the more than six years intervening is the story of Project AZORIAN, that is, the story of the *Hughes Glomar Explorer.**

AZORIAN ranks in the forefront of imaginative and bold operations undertaken in the long history of intelligence collection. It combined immense size and scope, advanced technological development, complex systems engineering and testing, unusually severe cover and security requirements, a demanding mission scenario in an unforgiving marine environment, the potential for a serious confrontation with the Soviet Union, a difficult and technically unusual exploitation phase, and high cost.

The project became widely known to the media in early 1975. At a time when the Central Intelligence Agency was under investigation by two committees of Congress and many members of the press, the CIA was credited in some newspaper editorials

* The full name of the ship is the MV *Hughes Glomar Explorer*, as shown in Figure 5. Global Marine, Inc., operates a number of ships with the word *Glomar* in their names

with pursuing its tradecraft in a most imaginative manner and doing what intelligence organizations are supposed to do—collect intelligence. Other articles were critical of the project, its cost, and method of operation.

Many senior U.S. Government officials, including three Directors of Central Intelligence, two Secretaries of Defense, two Secretaries of State, and two Presidents, were personally knowledgeable of the program and recognized it as an innovative undertaking of great magnitude and complexity. Key members of four Congressional committees were also kept informed of project progress and reviewed budget requests for the project.

Because the AZORIAN Project was of such huge dimensions in cost, risk, and intelligence value, it sometimes caused difficult problems for the officials who had to make the major decisions affecting it. Some of the questions did not lend themselves to clear-cut unequivocal answers: the intelligence value of the target after six years on the ocean floor, for example, or the political or physical response of the Russians if they should learn of the recovery effort. Because of these difficult questions, there could not be and was not unanimity of opinion among senior officials in CIA, Defense, State, the White House, and other agencies collectively responsible for AZORIAN and the decision on whether or not to proceed. Differences of opinion were expressed and debated in appropriate forums, both before the project was initiated and during its lifetime. These differences are expressed candidly in this article in several places.

In March 1975, columnist Jack Anderson disclosed the existence of the Hughes *Glomar Explorer* (HGE) project on national television and radio. The original press leak had occurred in the *Los Angeles Times* in February 1975. The *Times* story was unspecific, and wrong in important facts, but it gradually developed into a widespread security problem for the program before the Anderson disclosure.

The original leak resulted from an improbable series of events following a break-in and robbery in June 1974 at Sumna Corporation headquarters in Los Angeles. It was thought that among the stolen documents there might be a memorandum from a senior Hughes official to Howard Hughes describing a proposed CIA attempt to recover a sunken Soviet submarine and requesting Hughes' approval for Hughes Company participation. Thus it became necessary to brief several persons involved in the investigation in order to protect the document from disclosure if it were recovered. While the source of the leak was never identified, the circumstances became known to reporters who were covering the story and were disclosed in the *Los Angeles Times* story. Extraordinary efforts by DCI Colby and others were able to contain the spread of the story for a time, but it eventually became widely known in press circles, and Anderson decided to break it.

(b)(3)(c)

This article describes how the *Glomar* project—code-named AZORIAN, not "JENNIFER" as stated in the press—came about, how it was managed and conducted, and to what extent it met its goal. Subsequent articles will describe how the (b)(1) cover aspects of the AZORIAN/MATADOR program, and other related issues.

Project Origin

The diesel-powered Soviet G-II-class ballistic missile submarine pendant 722 (b)(1) (b)(1) sailed from Petropavlovsk on about 1 March 1968 to take a patrol station

(b)(1)

MARCH 1968

G-II CLASS SUBMARINE

16,500 ft

AUG 8TH 1974

RECOVERED

northeast of Hawaii, off the west coast of the United States, where it would be available for nuclear attack on U.S. targets in event of war. The submarine suffered an accident—cause unknown—and sank 1,560 miles northwest of Hawaii. With the 722 out of contact and overdue, the Soviets undertook a massive two-month search effort covering a broad area from Petropavlovsk to the patrol area northeast of Hawaii. The Soviet search was fruitless, (b)(1) Senior officials in the Department of Defense and CIA recognized that if it were feasible to devise a plan to recover important components of the submarine, extremely valuable information on Soviet strategic capabilities would be obtained.

Organizing for Recovery

Discussions regarding the feasibility of recovering components of the G-722 took place between technical representatives of CIA and the Department of Defense during the latter months of 1968 and in early 1969. These talks resulted in a letter to the Director of Central Intelligence, Richard Helms, from the Deputy Secretary of Defense, David Packard, on 1 April 1969. Packard, referring to the sunken submarine, asked for a study of what could be done in the next few years to recover significant components. He asked CIA to take the lead (b)(1) and designated Dr. John Foster, Director of Defense Research and Engineering (DD/R&E) as the point for coordination. Mr. Helms designated Carl Duckett, Deputy Director for Science and Technology (DD/S&T) as the CIA focal point.

(b)(1)
(b)(3)(c)

(b)(1) (b)(3)(c) During early July 1969 CIA representatives, including John Parangosky and worked to develop a plan for a to recover the submarine. This plan was coordinated and approved by mid-July 1969 (b)(1) (b)(3)(c)

(b)(1) (b)(3)(c) On 17 July 1969, Helms advised Packard that considerable work had been accomplished to undertake submarine recovery; that Duckett had met with and work was in progress to develop a charter for it, that an Agency task force was studying the retrieval problems associated with the sunken G-II submarine, (b)(1)

(b)(1) (b)(3)(c) On 8 August 1969, outlined to a high-level Executive Committee (consisting of Packard as Chairman; Helms; and the Science Advisor to the President, Dr. Lee DuBridge) the proposed organization for the submarine recovery effort, including structure, management, assets, personnel assignments, and intelligence objectives.

ExCom approved the establishment of the new organization and the allocation of resources and personnel, and agreed that the President should be advised of its establishment. This was done in a memorandum from Dr. Kissinger to President (b)(1) Nixon, which the President approved. Ernest "Zeke" Zellmer, a senior CIA (b)(3)(c) official from the DDS&T, who was a Naval Academy graduate and a submarine officer during World War II, (b)(1) Deputy Director, (b)(1) (b)(3)(c)

(b)(1)
(b)(3)(c)

agreement describing the organization's detailed responsibilities, management structure, and working relationships was signed by Packard and Helms on 19 August 1969. Among other features, it specified that the staffing of the new organization should reflect the best talent available from the CIA

(b)(1)
(b)(3)(c)

Security policy and procedures were in accordance with the basic agreement, which placed security management responsibility for the new security system, code-named JENNIFER, with the Director of Security, CIA, acting for the DCI. The Director of Security, in turn, delegated everyday security responsibility to the Chief of the Special Security Center (SSC) at CIA and directed him to establish compartmentation procedures to insulate JENNIFER data from data relating to other programs.

From the beginning, extraordinary security was imposed and clearances severely limited to those with an absolute need-to-know. It was clear at all stages of the AZORIAN Project that it had to be leak-proof to enable the mission to be conducted without diplomatic or physical interference from the Soviets. Therefore, air-tight security and effective cover were of the utmost importance, and project continuation depended upon them completely.

The original CIA task force for Project AZORIAN, established on 1 July 1969 in the (b)(3)(c) became the program headquarters complement, carried in Agency records as the Special Projects Staff, DDS&T. John Parangosky, who had previously held key assignments in the Agency IDEALIST (U-2) and OXCART (A-12) aircraft reconnaissance programs, was named to head this staff. (b)(3)(c) a senior CIA officer and Naval Academy graduate, was appointed as his Deputy.

Development of Engineering Concept

Parangosky initially assembled a small task force of engineers and technicians, who were closeted each day in a large room dubbed the "think tank," to develop an engineering concept to recover the Soviet submarine (b)(1)

Because of the great difficulty and complexity of the recovery problem, the task force called on three security-cleared contractors for early help: (b)(1)

(b)(1)
(b)(3)(c)

for structures and mechanisms; for naval architecture; and (b)(3)(c) for sensors. Principal criteria for the recovery concept were technical and operational feasibility, timeliness of implementation (get the system into the field as soon as possible for an early recovery mission), and reasonableness of costs. The group quickly immersed itself in the problem, fully aware of the challenge of a uniquely difficult task. No country in the world had ever succeeded in raising an object of this size and weight from such a depth.

1. *Early Concepts*

Three basic categories of lift concepts were considered for use in the early studies: total "brute force" or direct lift; trade ballast/buoyancy; and at-depth generation of buoyancy. Each is reviewed below:

a. *Total "Brute Force" (Direct) Lift*, referred to as the Rosenberg Winch, involved massive floating winches with wire ropes of the necessary strength to manage

the total weight of the target object (believed, at that time, to be about 2,000 to 2,200 long tons).

Use of a "drill string" (i.e., a "string" of connecting pipe) was discarded by the task force in the early discussions because it was difficult to envisage how the massive pipe required could be successfully deployed. It was believed at that time that the weight of the pipe alone could not be supported from the surface and still allow enough strength and lifting capacity for the submarine hull section.

b. In the *Trade Ballast/Buoyancy* concept, buoyant material would be carried to the bottom using excess ballast. On the bottom the ballast would be dropped, generating sufficient positive buoyancy to extricate the target from the bottom and help lift it to the surface.

c. *At-Depth Generation of Buoyancy* envisaged the generation of gas at depth to create buoyancy to lift the target. Methods reviewed were electrolysis of sea water, cryogenic gases (hydrogen, nitrogen), catalytic decomposition of hydrazine, and chemical generation of hydrogen through the reaction of active metals (e.g., sodium, lithium) or metal hydrides (e.g., lithium hydride).

(b)(1)
(b)(3)(c)

IDEALIST
U-2
OXCART
A-13

(b)(1)
(b)(3)(c)

JENNIFER
07-01-1969
AZORIAN
PROJECT
INCEPTION

(b)(1)
(b)(3)(c)

OXB4
B4
CART!
B4 OX

(b)(1)
(b)(3)(c)

COURT HOUSE CARNAGE

4. *Engineering Concept Selected*

By late July 1970, the heavy-lift concept was clearly the favored system to develop for the recovery mission. From that time on, it was given full attention by [illegible] appropriate parties. [illegible] (b)(1) the formal authorization to concentrate studies on the heavy-lift method on (b)(3)(c) September 1970 during a briefing at the Pentagon.

As the engineering concept was being formalized, a deep-ocean mining cover story was beginning to take form to explain all the project activities, particularly those planned for at-sea operations.

Executive Committee Approval

At the 30 October 1970 Executive Committee meeting, [redacted] addressed (b)(1) (b)(3)(c) matter of conceptual development for target recovery. He described the dead-lift (brute force) concept which would be designed to lift the estimated 1,750-ton target object from the 16,500-foot depth by means of heavy-lifting equipment mounted on a large (565' by 106') surface ship [redacted] (b)(1) (b)(3)(c)

MEGLADON OBSESSION!

(b)(1)
(b)(3)(c)

A DEEP-SEA MINING VENTURE WAS TO BE USED AS A COVER!

(b)(1)
(b)(3)(c)

Blue spandex at noon — Bonnemead COARL CASINO!

As mentioned previously, a deep-sea mining venture was to be used as the cover story for this operation. To support this theory, a mining device would be constructed which could be handled by the surface ship and mated into its center well. A submersible dry dock was also planned to complete the system.

(b)(1)
(b)(3)(c)

As with all engineering concepts, technical risk areas were involved, and [redacted] (b)(1) identified the major ones. [redacted] (b)(3)(c) They were characterized as being within the state-of-the-art but requiring a major beef-up to handle the weights and pressures involved. The control system was also considered a risk area, but its feasibility had already been demonstrated by another Global Marine ship, the *Glomar Challenger*, which drilled a hole in the sea floor, withdrew the drill bit, and then (b)(1) placed a new bit into the same drill hole in deep water earlier in 1970. [redacted] further (b)(3)(c) pointed out that an extensive simulation program would be conducted to define the dynamic characteristics and stresses of the system. Initial analyses had not uncovered any unexpected or insurmountable problems.

(b)(1)
(b)(3)(c)

All in all, [redacted] at that time estimated the probability of success at about 10 percent, a not very assuring number. (This estimate continued to rise, however, as

design, development, and testing proceeded. Just prior to the mission, [redacted] (b)(1) believ (b)(3)(c) the probability of success to be about 90 percent.) Helms stated that the *ad hoc* committee of the U.S. Intelligence Board (USIB) had completed a detailed review of the value of the AZORIAN target on which they had placed the highest priority, and he concurred in their assessment. [redacted] (b)(3)(c)

Dr. Edward David, the President's Science Advisor, asked [redacted] (b)(1) assurance there was that the desired material [redacted] he also questioned whether it would be in an exploitable condition when recovered. [redacted] (b)(1) (b)(3)(c)

(b)(1)
(b)(3)(c)

[redacted] pointed out that there were two basic questions to be answered: should the organization proceed all-out with AZORIAN? If so, where would funding be obtained? Packard answered that not all data on fund availability were known, but that [redacted] nevertheless should go ahead with the AZORIAN project.

(b)(1)
(b)(3)(c)

Some concluding remarks were made by others at the meeting. Dr. John Foster, Director of Defense Research & Engineering, observed that there appeared to be an underestimation by those present of the value of the target and of the impact AZORIAN would have [redacted] (b)(1) (b)(3)(c) Helms commented that he was more confident in regard to this project than to some others because of the thorough work that had been done up to that point.

Packard summed up the proceedings of this meeting and said the consensus was to proceed with AZORIAN. He felt that planning should be done on a [redacted] (b)(3)(c) level but said it would be necessary to identify possible sources of funding.

(b)(1)
(b)(3)(c)

underestimation of value

(b)(1)
(b)(3)(c)

Recovery Systems Modification

[redacted] reported back to ExCom on 24 March 1971 on technical and design progress of AZORIAN. Total cost now was projected to [redacted] (b)(3)(c) with the

principal cost increases attributable to two factors: (1) extended operations to permit more adequate systems testing, and (2) cover enhancement and recomputation of general and administrative expenses. Increases in hardware costs were relatively small.

The Crucial 4 August ExCom Meeting

The next ExCom meeting, on 4 August 1971, proved to be crucial to the life of the project.

Packard opened by stating he considered it necessary to terminate AZORIAN because of the risks involved, escalating costs, and the general budget situation. Nevertheless, he asked [redacted] to brief ExCom on program status.

(b)(1)
(b)(3)(c)

The "other increases" included, for example, modifications of the well area for safety reasons; design and manufacture of a small mining machine for cover purposes; and other contractor cost increases.

There was an extended ExCom discussion of the cost growth problem along with the strained budget status, the anticipated very high intelligence value of the target, and the operational risks. Packard concluded that the project should be continued for a few months, but that [redacted] should consider alternatives in case it were subsequently terminated. This guidance was later expanded to direct a thorough cost review while permitting procurement of long-lead items. However, the keel of the surface ship should not be laid until further approval.

(b)(1)
(b)(3)(c)

Budgetary Shoals

The 4 August 1971 ExCom meeting was but the first of a number of recurring occasions on which AZORIAN nearly foundered over cost increases and operational risks. Some of the original recovery concepts such as buoyancy lift had been price-tagged as low as [redacted] (b)(3)(c) the chosen concept was first costed (b)(3)(c) (b)(3)(c) in 1970. In less than a year it had jumped more than 50 percent to some [redacted]

B.S. Archive

cover enhancement and recomputation of the general and administrative expences.

(b)(1)

small mining machines for cover purposes.

(b)(3)(c) and another year brought the figure to (b)(3)(c) Each time, however, consideration of the intelligence potential carried the day.

Design and Development of AZORIAN System

By the November 1971 ExCom meeting, substantial strides had been made in design and engineering development of major ship systems, such as the heavy-lift and heave-compensation systems. All details of the pipe-string design also had been completed, and a pipe-string specimen had been fabricated to develop confidence in pipe section fabrication. Design of the large test fixture which would proof-test each 30-foot section of the pipe was nearly complete.

(b)(1)

By the early fall of 1971 Sun Shipbuilding and Drydock Co., Chester, Pa., which had been selected to build the surface ship, was proceeding with fabrication of the docking well gate guides and the temporary bottom structure for the docking well, and preparing to lay the keel.

(b)(1)
(b)(3)(c)

On 4 October, Packard authorized [redacted] to proceed with AZORIAN but directed that every effort be made to contain costs within the then-refined total program cost of (b)(3)(c)

(b)(1)
(b)(3)(c)

In April 1972, [redacted] reported to ExCom that the keel for the surface ship had been laid by Sun Shipbuilders on 16 November 1971 and that the schedule now called for a launch by 5 October 1972 and delivery to the program by 20 April 1973. Further, all long-lead equipment was under procurement and on schedule.

The construction barge was launched in San Diego in January 1972, and reached Redwood City early in Ma[redacted]

(b)(1)
(b)(3)(c)

equipment—control center, sensors, and control, power, and data-transmission subsystems—had been completed during FY 1971.

(b)(1)
(b)(3)(c)

By April 1972, 55 pieces of the pipe string had been poured—[redacted]—and final delivery of all 590 pieces at dockside was scheduled for 7 June 1973.

(b)(1)
(b)(3)(c)

All data-processing functional requirements were defined and documented during December 1971, and the configuration [redacted] computers and associated peripheral equipment was put in final form in January 1972.

(b)(1)
(b)(3)(c)

Managerial Views of Program in 1972

At the ExCom meeting on 28 July 1972 [redacted] pointed out that AZORIAN had been developed as a one-of-a-kind system intended for a specific job and that because of this uniqueness and the need to accomplish the mission at the earliest possible time, work on the system was proceeding concurrent with design and production. The consequence had been that the amassing of a considerable body of knowledge enhanced the chances of success, but it had also necessitated some costly changes along the way. [redacted] said he expected delivery of the ship in the spring of 1973, and operational deployment in the summer of 1974. He pointed out that recent major changes had driven the total system cost to more than (b)(3)(c) These changes included ship hull strengthening, modification of propulsion shafting, increased electrical capacity, the incorporation of a sewage system to meet new ecological standards, and an improved pipe-string handling process. In addition, a second and more expensive subcontractor had been brought into pipe-string production to meet the tight delivery schedule. [redacted] said construction of the whole AZORIAN system was expected to be largely completed by the end of FY 1973.

(b)(1)
(b)(3)(c)

(b)(1)
(b)(3)(c)

Early Political Feasibility Evaluation by 40 Committee

At this 28 July 1972 ExCom meeting, it was agreed that the 40 Committee should be asked for an early evaluation of the political feasibility of conducting the mission in mid-1974, in the light of increasing concern that by that time the developing political climate might prohibit mission approval. On 14 August 1972 Kenneth Rush, who had succeeded David Packard as Deputy Secretary of Defense and thereby as chairman of ExCom, forwarded two documents to the 40 Committee, one an intelligence reevaluation of the submarine target object by the *ad hoc* Committee of USIB, the other a summary of the program's technical, operational, cover, and security factors. He reported to the 40 Committee in his covering memorandum that AZORIAN was proceeding on schedule [redacted] It would reach an accrued cost of (b)(3)(c) by 31 August 1972, and was expected to cost (b)(3)(c) for completion. In the light of the developing political climate and uncertain budget problems, he said, ExCom was requesting a preliminary political assessment.

(b)(1)
(b)(3)(c)

On 15 August 1972, Rush forwarded to Helms and David copies of three memoranda relative to the AZORIAN assessment which he had received from the Chief of Naval Operations, Admiral Elmo R. Zumwalt, Jr.; the Assistant Secretary of Defense (Intelligence), Dr. Hall; and DIA Director Vice Admiral de Poix. All three to varying degrees judged that the value of the anticipated intelligence gain from the mission was less than that estimated by the *ad hoc* Committee, pointed to the escalating costs and political risks of AZORIAN, and generally felt that the program should be terminated. Zumwalt, while not recommending immediate termination,

40 committee

stated his strong reservations about continuing AZORIAN and recommended that the cost-benefits be studied further with relation to the total DoD intelligence program.

(b)(1) (b)(3)(c) forwarded a detailed report to Hall which discussed in detail expected benefits potentially derivable from recovery of the G-722 target object. It was clear that (b)(3)(c) was still favorable as far as expected mission intelligence value was concerned.

In any event, all these papers and the assessment of the *ad hoc* Committee of USIB which reaffirmed the expected important intelligence gains including those in cryptographic areas were forwarded to 40 Committee by Deputy Secretary Rush on 21 August 1972 along with CIA comments which took issue with Zumwalt's and Hall's memoranda.

At this crucial juncture Admiral Moorer, Chairman of the Joint Chiefs of Staff, sent a memo to the 40 Committee on 28 August stating that he could not support the proposed AZORIAN mission, primarily because of decreased intelligence value of the target with the passage of time since the G-722 sank in March 1968, the escalating costs which he believed would continue, and the possibility of strong reaction from the Soviets if they suspected the nature of the activity.

(b)(1)
(b)(3)(c)

Helms countered on 14 September with a memo to Chairman, 40 Committee, which argued for a continuation of AZORIAN. While agreeing that the differing judgments around the community concerning the intelligence value of items and systems believed to be aboard the G-722 were understandable in such a difficult program, Helms urged a decision to proceed based on the documentation prepared by the joint program organization and the USIB *ad hoc* Committee assessment, which he considered an accurate national evaluation of intelligence potential. He further believed the technical risks were acceptable in view of the expected intelligence value, and that a political judgment as to whether to conduct the mission could be made satisfactorily only at mission time. He also believed the risk of further significant cost increase was low, and that in any case the costs recoverable if the program were terminated would be small.

Then, on 18 September 1972, Rush weighed in with his judgment. Because of current and continuing political relationships and negotiations with the Soviet Union, he believed it undesirable to execute AZORIAN as then planned. He predicted the Soviets would react strongly with physical force if they learned of the nature of the mission beforehand, and even if they discovered its nature only at a later date, U.S.-Soviet relationships and negotiations would be seriously damaged. He also believed there was a high risk of technical failure, and estimated the chances of technical success at 20 to 30 percent based on the existing program schedule and budget. Rush did not take issue with Helms' evaluation of the intelligence benefits but believed that, overall, the program should be terminated in view of high political and technical risks. He shared Helms' concern about the effects of termination on contractor relationships, because the major contractors had publicly committed themselves to a large ocean mining endeavor. Helms felt that a termination now would appear capricious to contractors and jeopardize future cooperative efforts with the intelligence community when contractor support would be needed.

The AZORIAN Review Panel

Rush made the next major move by establishing a panel under Hall to review and refine AZORIAN cost data, to examine projected savings if the program were

cancelled, and, alternatively, to look at technical risk areas that he believed might lead to greater costs; he invited Helms to provide a panel member. The AZORIAN Review Panel consisted of representatives of the DCI, Office of the Science Advisor to the Presider(b)(3)(c) Defense Contract Audit Agency, and the Office of the Assistant Secretary of Defense (Comptroller), and was convened by Helms and Rush.

The panel reported back to Rush on 11 December 1972. By way of background, the report stated that the program had been organized around four major developmental tasks: surface ship, capture vehicle, pipe string, and data-processing systems, and that program management had been highly effective with the result that all key phases of the program were on schedule. The key phases included developments on the boundary of the state-of-the-art, such as some of the largest forgings ever made, entirely new pipe metallurgy, and a lifting apparatus that could not be fully tested prior to the actual mission operation. The new and dramatic individual developments led to some legitimate concern about the future technological risks. The panel could not in the time available examine the program's technical uncertainties, but stated that such a bold engineering undertaking must be considered a high-risk venture. The panel concluded:

1. The saving to the government, if AZORIAN were terminated, would range between (b)(3)(c) depending upon the effectiveness of the cover operation and availability of a competitive market.

2. Should the program be continued, the estimated cost growth could range from (b)(3)(c) assuming that the mission was accomplished on the planned date.

3. Current schedule and program office planning should allow the mission to be performed on the target date.

4. There was no way to test the full system in advance of the actual lift operation, and engineering unknowns at the time provided the greatest uncertainty in the program.

In a separate report on 21 November 1972 (b)(3)(c) and member of the AZORIAN Review Panel, concluded as a result of his overview of the project that the technical prognosis was good, project management was excellent, and schedule and cost aspects had been tracking reasonably well. He noted that the project was then entering a critical testing phase wherein difficulties had to be expected despite anticipatory efforts that had been exerted to date. He believed that further cost growth would probably develop during the testing phase, but that substantial offsets could be generated as well.

Regarding costs, (b)(3)(c) noted that total project cost had grown by 66 percent to estimated in October 1970 based on contractor proposals, and by six percent from the (b)(3)(c) at which the contracts were calculated in December 1971. Considering the highly developmental nature of the undertaking, he regarded this as a creditable performance. AZORIAN, he said, was clearly a bold engineering undertaking which staggered the imagination. It reflected a massive degree of concurrency in design, development, and production, and—being without precedent in its totality—must be considered a high-risk venture. Each element of the total system, however, had highly professional scientific and engineering attention, and thorough testing routines were planned short of the final operation.

BRIBE!

BUFF!

The 40 Committee Decision to Proceed

The 28 July 1972 ExCom decision to seek a 40 Committee review culminated on 11 December 1972. After the most intensive, detailed, and broad-based examination to date of all facets of the program, the final decision, made by the President, was to continue the AZORIAN project, with 40 Committee exercising appropriate policy supervision. In his memo on that date to 40 Committee principals, Dr. Kissinger said the President was impressed by the project's creative and innovative approach to a complicated task and that he praised the cooperation among elements of the intelligence community to serve a national objective.

(b)(1)
(b)(3)(c)

So, almost four years after the initial discussions between Agency and DoD representatives about the feasibility of recovering the G-722 (b)(1) a very crucial milestone had been passed, the most important in a long series of high-level program reviews which, at times, had threatened the continued existence of the AZORIAN program. Now, with the Presidential green light, the program office redoubled its efforts to keep all work and planning on schedule to maximize the chances of success in 1974.

Construction and Delivery of HGE

In April 1971, Robert F. Bauer, chairman of the board of Global Marine, Inc., had issued a press release announcing that GMI would build a 600-foot mining ship for the Hughes Tool Company (HTC). The following month, the GMI Quarterly Financial Report to the stockholders mentioned that a preliminary agreement had been reached with Sun Shipbuilding Company for construction of the ship. On 4 November 1972, the *Hughes Glomar Explorer* was launched with the usual champagne christening ceremony and speeches by Bauer and by Paul Reeve, general manager of the Ocean Mining Division of the HTC. At the same time, a press release was made available to the news media providing general information about the *Hughes Glomar Explorer* and some of the principal contractors.

Between 25 November and 23 December 1972, the ship's well-gate guides were installed. The next few months at Sun Shipyard were somewhat hectic as the HGE was readied for builders' trials, scheduled for mid-April 1973 to verify to Global Marine the satisfactory basic operation of the ship and its operating equipment and machinery. Additionally, certain tests were scheduled to obtain certification by the U.S. Coast Guard and the American Bureau of Shipping. Sea trials were conducted under normal operating and weather conditions, in open sea and deep water, and, where applicable, in the presence of Global Marine, Sun Shipbuilding, the U.S. Coast Guard, the American Bureau of Shipping, and various vendors or subcontractors.

Trials and tests were divided into three categories: general items including trim and ballast, dual pilot houses, lifeboat drill, and vibration; standard ship tests which involved main propulsion, speed trials, turning radius, astern and emergency steering, stabilizing system, calibration of propulsion and thruster motors; and unconventional ship tests such as checking docking legs, gimbal bearings, and the dynamic positioning system.

Summary of Trials and Trial Data—Builder's Trials

The HGE (see Figure 5), left Sun Shipyard, Chester, Pa., on 12 April, down the Delaware River and through Delaware Bay into the Atlantic Ocean where all tests were conducted in an area approximately 75 nautical miles southeast of Delaware Bay. There were 203 people on board, either participating in or observing the trials. Sun Shipyard had four key operating personnel, four who were supervising, and also a large number of engineers, electricians, pipe fitters, and operating crew; Global Marine had 58 representatives with an engineering group; and the Special Project Staff had several representatives under cover. The American Bureau of Shipping and the U.S. Coast Guard also had several representatives on board.

The ship and its equipment and machinery were operated by Sun Ship personnel only, and tests and trials were carried out under normal operating conditions, in good weather and calm seas. All scheduled tests were accomplished successfully in all areas. The ship's handling during the tests was reported as follows: "HGE overall seaworthiness, mobility, and response is excellent." A few major and a number of minor discrepancies were noted which Sun Ship and Global Marine were responsible for correcting before the ship was delivered.

Builder's trials were concluded late in the evening of 14 April with completion of thruster tests. The HGE then proceeded to Delaware Bay and retraced its route up the Delaware River, arriving at Sun Shipbuilding, Chester, Pa., on 15 April. Upon return to Sun Shipyard, the HGE underwent a major effort to correct deficiencies and ready it for delivery to Global Marine as operator for the U.S. Government, with completion of East Coast trials scheduled for early July 1973.

East Coast Trials, July–August 1973

Even though all marine systems were given their first sea test during builder's trials, it was the intent during East Coast trials to test most basic marine systems again and to record test data. Further, a great many systems had not been tested at sea during builder's trials and could not be adequately tested at the dock, such as heavy lift, docking legs, heave compensator, gimbal platform, and the pipe-handling system, and test personnel were to give maximum effort to these. Dockside work at Sun Shipbuilding was completed early in July, and the *Hughes Glomar Explorer* set out for East Coast trials (originally scheduled for 7 July) on 24 July 1973. Curtis Crooke of GMI was designated overall test director, and each test was assigned a principal reviewer from the Global Marine review team. As discrepancies were encountered and recorded, reviewers were responsible for signing off formal acceptance or rejection of each test. Discrepancies which could not be corrected immediately were recorded and scheduled for correction either during transit from the East to West Coast or during West Coast mobilization after the HGE's arrival at Long Beach.

Ship's activities were scheduled from departure from Sun Shipyard dock until it arrived at Hamilton, Bermuda, the first port of call, including some 47 different tests or activities which were conducted in six main areas.

As the HGE headed south down the Delaware River at low tide, it passed under two bridges and one power line. One bridge was the Delaware Memorial Bridge at Wilmington. To get the ship under the 225-foot-high span, the top 28 feet of the derrick had to be removed and stored on main deck. Once below the bridge, the Sun 200, a huge floating crane, picked up the 28-foot section and placed it back atop the 200-foot derrick where it was secured.

MV HUGHES GLOMAR EXPLO

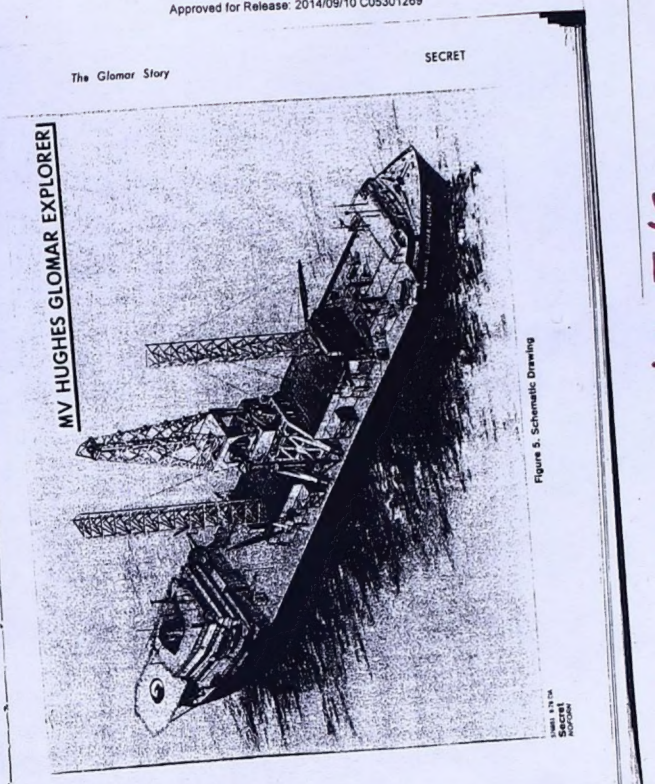


Figure 5. Schematic Drawing

After shallow-water tests off Delaware Bay, the ship proceeded to the deep-water test location 80 miles northwest of Bermuda, where the Automatic Station Keeping (ASK) system had its first test in deep water; about ten double sections (600 feet) of heavy pipe were run in the pipe-handling system; and the gimbal platform was put through its first fully operational test. At the conclusion of test activity the ship proceeded to Bermuda for crew change and final preparation and loading for the East-West transit to Long Beach, Calif., around South America via the Strait of Magellan.

Results of East Coast Trials

It was concluded that—except for a few deficiencies—basic ship's systems had performed very well, and the HGE was capable of performing its intended job. The hull was determined to be sound, with no apparent flaws or weaknesses. Major structural assemblies such as the well gates, A-frame, gimbal platform, derrick, and docking legs all appeared to be structurally sound with satisfactory alignment and fit, so that no major structural rework or change in concept of the basic ship's systems was required. For the most part, all mining equipment items operated as designed, although there were several serious deficiencies and many minor ones. Corrective work was scheduled to begin during the transit to Long Beach and early in West Coast mobilization for the mission. To illustrate the complexity and magnitude of readying the ship for West Coast testing, it was determined immediately after East Coast trials that 40 corrective tasks could be performed prior to departure from Bermuda; 136 tasks could be performed during transit to Long Beach; and 245 tasks would have to be performed as soon as possible during West Coast mobilization.

East-West Transit, 11 August–30 September 1973

After completion of East Coast trials, the *Hughes Glomar Explorer* remained at anchor off Bermuda 9 through 11 August 1973 while a crew change was accomplished and all preparations completed for the 12,700-mile voyage. This was planned to take just over 50 days at an average speed of advance of 10.5 knots. The long way around was necessary because the HGE's 116-foot beam was too wide to permit passage through the Panama Canal. A transit crew of 96 persons was decided upon, of whom 47 were regular ship's crew members and the remaining 49 were Global Marine engineers and technicians who used the time in transit to complete a number of fitting-out tasks.

Arrangements were made through the Global Marine agent in Valparaiso, Chile, to carry two Chilean pilots for the transit through the Strait of Magellan. They were to board the HGE in Possession Bay on the Atlantic side, provide the ship safe passage for the 320-mile journey through the Strait to the Pacific Ocean, and ride the ship to Valparaiso for disembarkation.

The replacement crew for the East-West transit was flown to Bermuda from Los Angeles on 10 August 1973. By midday on the 11th, engine modifications had been completed, stores and provisions loaded, and final preparations completed, so that the HGE was under way from the Bermuda anchorage at 1630. Because the ship was government property, there was a senior U.S. Government representative on board as commander—as differentiated from the ship's captain. The commander's responsibility was to ensure that the government's best interests were served even though the ship was in a "white"—i.e., commercial—configuration and the majority of the crew were not witting of the AZORIAN Program. U.S. Government representatives used aliases as they were under tight security cover for the voyage. The HGE's Captain and a few

others were briefed and aware of proper actions to take in event of a political incident en route to Long Beach.

Bermuda to Entrance, Magellan Strait, 11 August–5 September 1973

Weather was consistently excellent throughout this leg, although 50 to 60-knot winds and 15 to 20-foot seas were experienced for a brief period while passing through a storm front.

The HGE handled and rode well, a work routine was established, and good progress made on all transit tasks; morale was good, and the marine crew competent and well-organized. Morale was helped by a well-staffed galley (three cooks and two bakers) which produced superb food.

During the latter part of August, news reports from Chile verified that the Allende government was experiencing problems, with the possibility of widespread labor strikes. Although it was considered unlikely, project headquarters developed plans for the possibility that Chilean pilots might not be available for passage through the Strait of Magellan. Additionally, contingency plans were prepared in the event Chilean or Argentine ships showed intentions of interfering with the HGE. Alternative options were prepared for Director, Special Projects, in case passage through the Strait was denied or it was deemed politically inadvisable to go through. These options were: (1) standing off the coast of South America until things settled down, (2) going around Cape Horn into the Pacific, or (3) going east around South Africa, through the Indian Ocean, then through the Pacific. As events turned out, an alternative was not required.

Transit of Magellan Strait, 5–6 September 1973

The HGE arrived at the entrance to the Strait on 5 September, anchored in Possession Bay, and the two Chilean pilots were embarked at 1100 local time. The transit was made without incident, although during the last half of the passage the ship went through a cold front with accompanying 45 to 50-knot winds. This slowed progress somewhat, but the HGE cleared the Strait and entered the Pacific Ocean at approximately 1500 6 September.

Strait of Magellan to Valparaiso, Chile, 6–13 September 1973

Immediately after entering the Pacific Ocean, the HGE ran into extremely heavy weather which slowed its progress again and actually forced the ship to heave to for a short period in 60-knot winds and 25-foot seas. Throughout these conditions, however, the ship handled beautifully, rode well, and its performance was never of concern to the crew. The remainder of the leg into Valparaiso was uneventful, and the ship's crew used this time to complete for Global Marine a list of parts and supplies to be loaded at Valparaiso when the pilots were disembarked. During the few days preceding the 11 September military coup, the ship's commander monitored commercial radio broadcasts as the HGE approached Valparaiso, and he was aware of the increasing tension developing in Santiago and Valparaiso. Nevertheless, he and the HGE's captain, Louis Kingma, did not allow any concern over these events to show in their daily messages to headquarters.

The HGE anchored in the outer harbor of Valparaiso at 2100 local time on 12 September. Shortly after its arrival, a small Chilean naval launch came alongside, and a naval officer and seaman came aboard for discussions with Captain Kingma, at which time the ship was formally entered into the port and Kingma was apprised of the military coup in Chile. Because a curfew was in effect, no further personnel

movements to the ship could be accomplished that night, but the two Chilean pilots left the HGE with the Chilean naval personnel.

On 7 September, prior to these events, Global Marine's enterprising personnel representative had left Los Angeles for Santiago accompanied by one other Global employee. They brought some 28 boxes of materials and supplies for the HGE, as well as a bag of personal mail. Their principal task was to arrange for the transfer of the supplies and, more importantly, the entry into Chile and transfer to the HGE of seven technicians, all this having been programmed in early August. They arrived in Santiago on 8 September and with the assistance of other representatives, processed the supplies through customs and proceeded to Valparaiso. On Monday, 10 September, Global's representatives traveled to Santiago again to meet six arriving (b)(1) (b)(3)(c) supplies, were all processed and cleared by Customs. The entire party then returned to Valparaiso and settled in the Hotel O'Higgins to await the arrival of the HGE on 12 September.

At approximately 0600 on 11 September, the Americans were awakened by noise outside the hotel. It was evident the revolution had started, as there were soldiers, tanks, armored cars, and other military vehicles all over the city. The hotel was surrounded, communications cut off, and guests confined to the hotel for the next two or three days. As attested to in his trip report—which reads like a Hollywood script—Tom Williams, the GMI personnel representative, encountered much intrigue and suspense in getting the seven technicians, supplies, and parts loaded on the HGE in the midst of the revolution. Nevertheless, in spite of a curfew, lack of communications, and the general confusion, Williams did a magnificent job of getting to the right people in the new government so that at approximately noon on 13 September, all persons and supplies were allowed aboard the HGE, and the ship was cleared to leave Valparaiso. The HGE weighed anchor at about 1500 and sailed for Long Beach. The presence of a covert U.S. intelligence ship in a Chilean port during the military coup was a bizarre coincidence quite unrelated to the rumors that "the CIA had 200 agents in Chile for the sole purpose of ousting Allende." There were no unfavorable incidents involving the ship, crew members, or the Global Marine representative.

Valparaiso, Chile, to Long Beach, California, 13–30 September 1973

This leg of the voyage was completed without incident. The weather was excellent with the exception of two tropical storms that the ship easily avoided; work progressed well, and the HGE made a final report on transit task completions. Only 21 scheduled jobs were not completed due to lack of time. The heavy-lift team which boarded at Valparaiso made excellent progress, following a preplanned work schedule. The HGE arrived Long Beach at 1700 PST, 30 September, and tied up at Pier E without incident. As it was a Sunday evening, the ship's arrival did not attract undue attention; stores were loaded and the relief crew came on board early Monday to conclude the east-west transit phase of the AZORIAN program.

In its transit from the Atlantic to the Pacific, the HGE travelled 12,745 nm in 50 days, 7 hours and 30 minutes, for an average speed of 10.8 knots. A total of 20,643 barrels of fuel were consumed, which equates to 68 gallons per mile.

Mobilization for Mission, October 1973–January 1974

After the East–West transit and arrival at Long Beach on 30 September, the HGE began a period of mobilization for the mission that would end with further systems testing (b)(1)

VALPARISIO CHILE!

47 CREW 49 HUGHES.

AVG. SPEED 10.5K

116" BEAM — WIDTH!

96 CREW

SEPT. 11TH = MELT-DOWN 1973

CREW MORAL GOOD!

3 COOKS! 2 BAKERS!

THE CIA HAD 200 AGENTS OUT ABOUT!

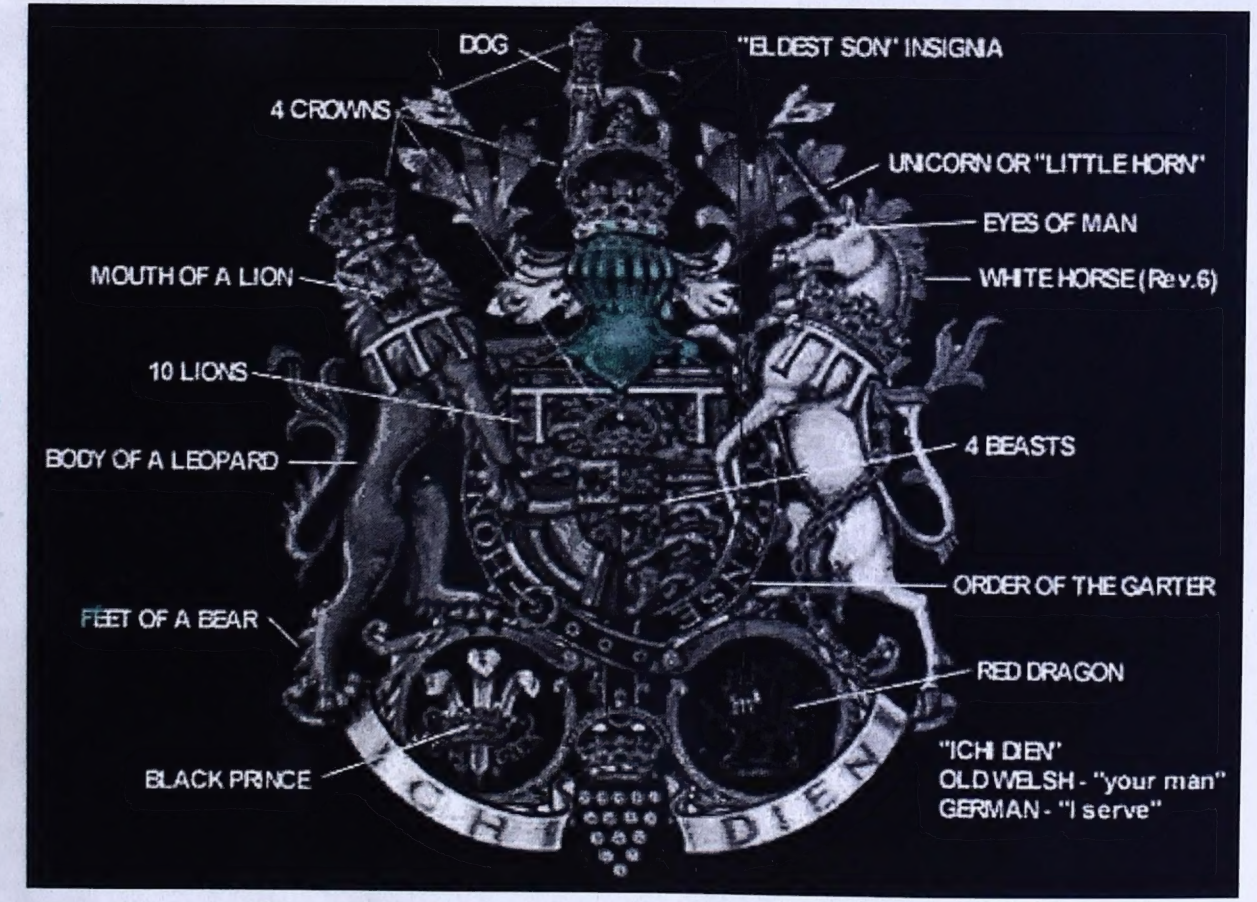
WHICH READS LIKE A HOLLY-

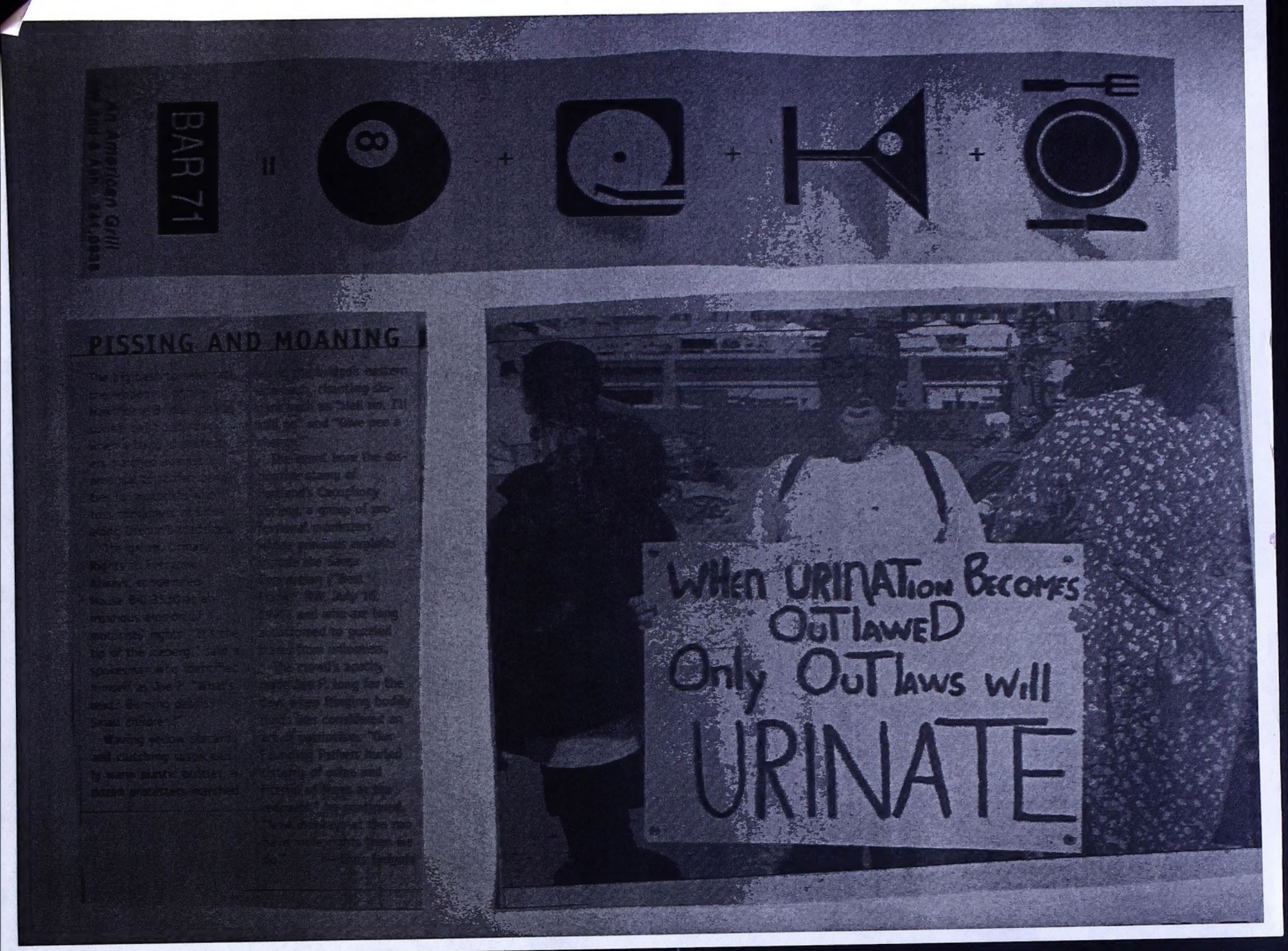
20,54 BARRE OF O

68 G

A MI

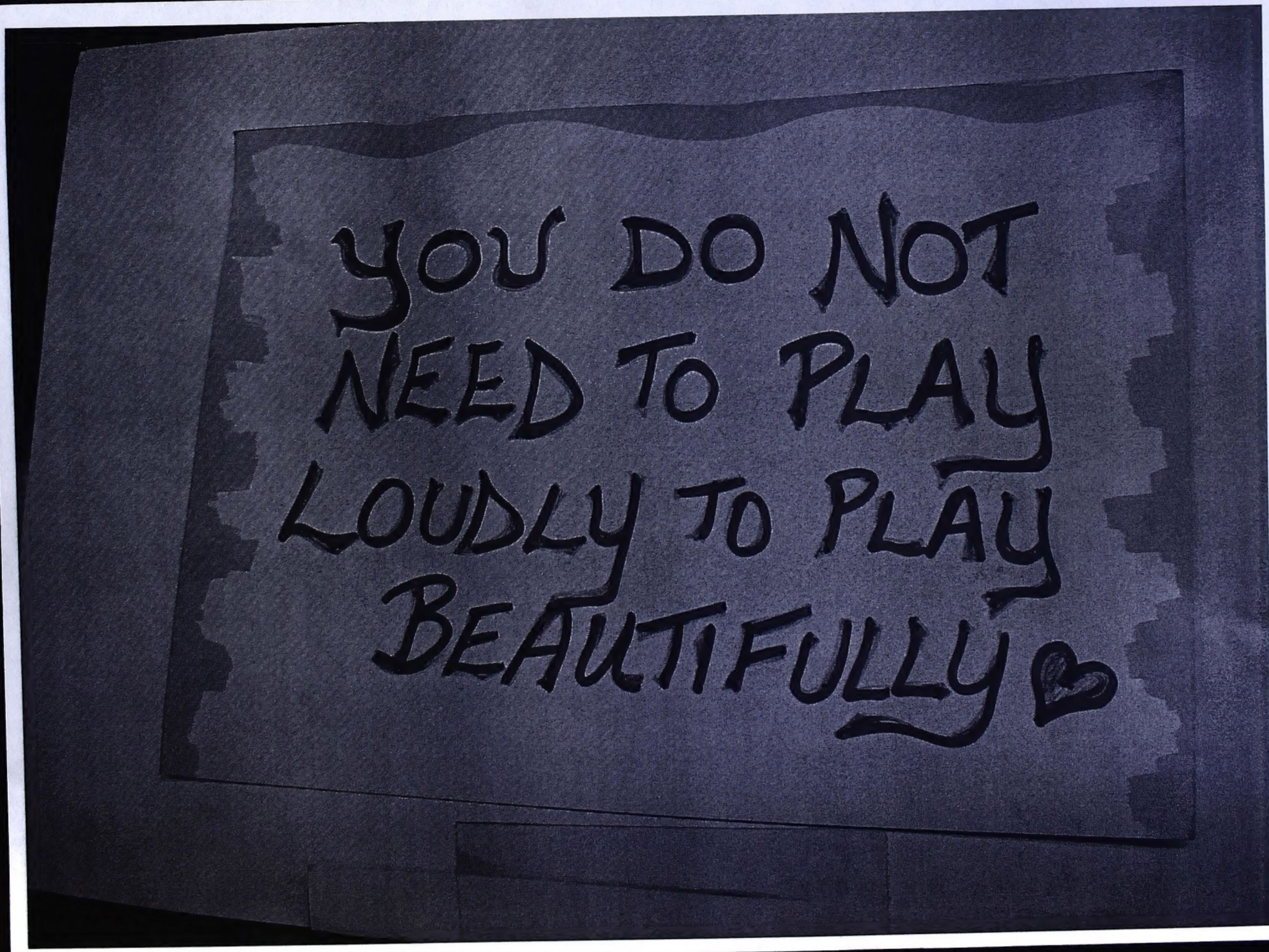
68 GALLONS PER MILE!


DOG
"ELDEST SON" INSIGNIA
4 CROWNS
UNICORN OR "LITTLE HORN"
EYES OF MAN
MOUTH OF A LION
WHITE HORSE (Rev.6)
10 LIONS
4 BEASTS
BODY OF A LEOPARD
ORDER OF THE GARTER
FEET OF A BEAR
RED DRAGON
BLACK PRINCE
"ICH DIEN"
OLD WELSH - "your man"
GERMAN - "I serve"
ICH DIEN

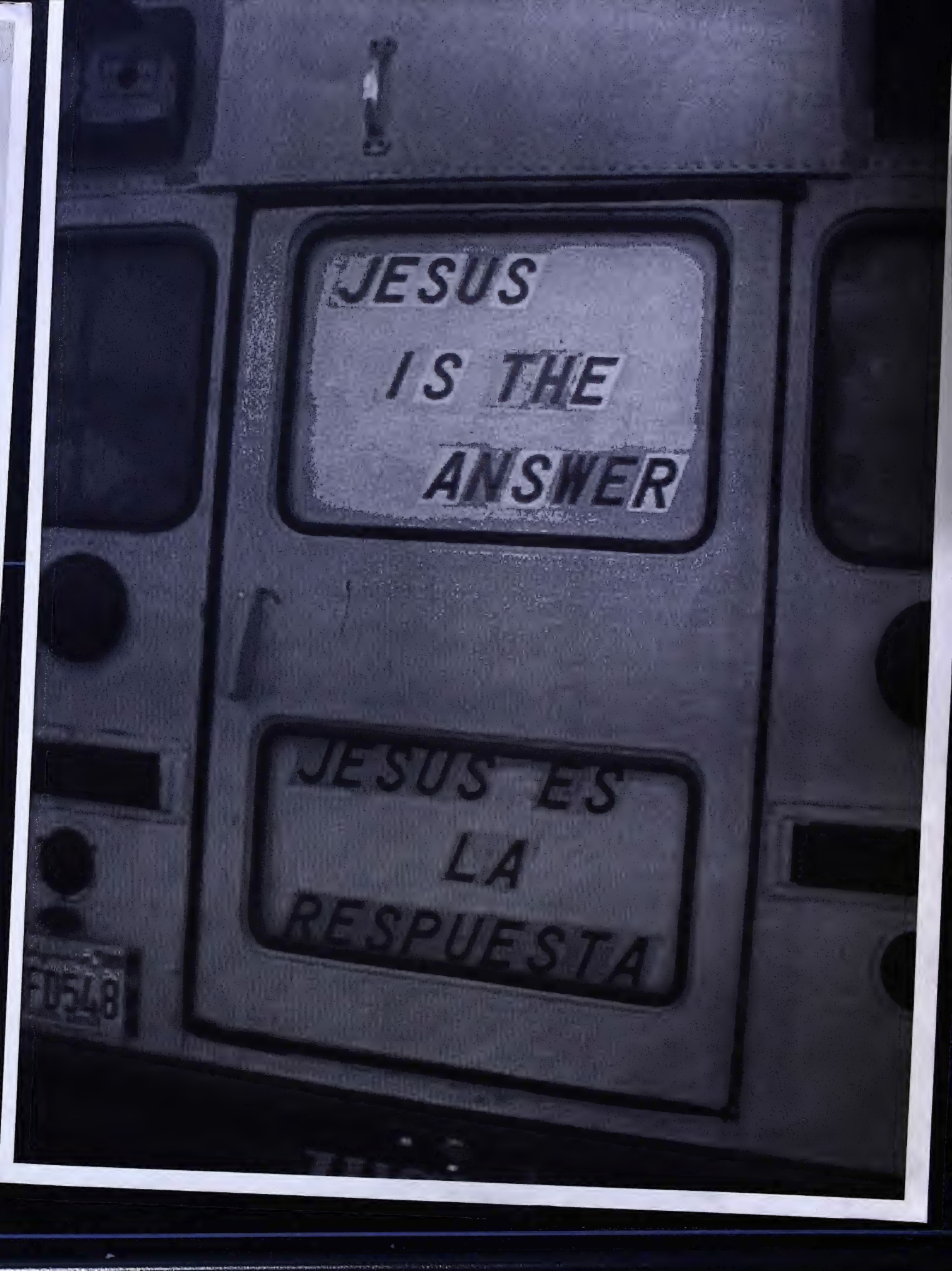


PISSING AND MOANING

WHEN URINATION BECOMES OUTLAWED
ONLY OUTLAWS WILL
URINATE


YOU DO NOT
NEED TO PLAY
LOUDLY TO PLAY
BEAUTIFULLY

Captain Guts


JESUS
IS THE
ANSWER
JESUS ES
LA
RESPUESTA

Thumbnails for ABC Sept. 11, 2001 8:31 am - 9:12 am

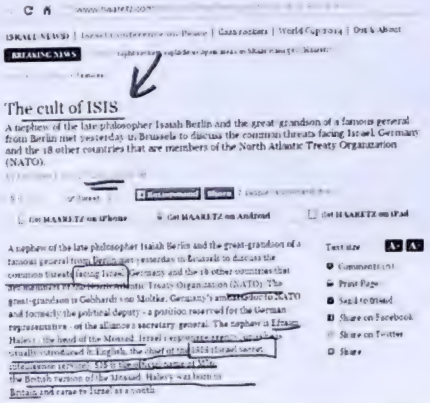
Return to Program Details

Below are images for every 1 minute in the program.

ISIS is a Creation of the Israeli Mossad

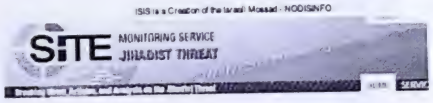
ISIS is a Creation of the Israeli Mossad

Regarding the so-called Islamic State of Iraq and al-Sham or Islamic state of Iraq and Syria (ISIS) it can be no coincidence that through its brutality it is creating a great black mark against Islaam. Nor can its direct relationship to Zionist plots, that the realm of Israeli spy agencies, be a coincidence. The family of Israeli spy agencies is also known as ISIS. For the Zionists ISIS stands for ***Israeli Secret Intelligence Service.***



So it is, the primary name of the Israeli spy agencies is now revealed, Israeli Secret Intelligent Service or ISIS. It could be no coincidence that the terrorist group which is furthering Zionist plots, that is the carving up of Iraq into multiple enclaves, has the same namesake.

The cult in its new-age form is heavily supported by Zionist-orchestrated Websites such as Site Monitoring Service:



Latest Articles

ISIS Spokesman Declares Caliphate, Rebrands Group as Islamic State

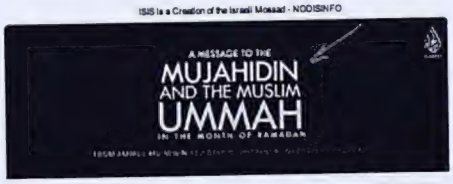
Caliph Abraham?

Site is strictly a pro-Israeli, arch-Zionist entity. Yet, it heavily promotes the release of information – in multiple languages – related to ISIS?

https://news.siteintelgroup.com/

There is, here, the use of the phraseology regarding "The Promise," now applied to the Arabic name for God, Allah. "This is the Promise of Allah" is not Islamic terminology in the least. Nor would a Muslim or Muslim group wildly and irresponsibly announce the name of a Caliph; there is no Caliph needed in this faith. A Caliph would be a head of a conglomerate of States. There is no such conglomerate of states or entities in the Islamic world.

Al-Hayat media is also a promoter. No doubt, al-Hayat is directly tied to the Zionist cabal:



AlHayat Media Center @Follow
@al_hayat_en
#AlHayat_Media presents: Multi-language translations of the new speech bit.ly/1mFOaav
11:27 AM - 5 Jul 2014
52 RETWEETS 22 FAVORITES

Like Site, al-Hayat, a heavy promoter of ISIS, is a Zionist-controlled entity:

Al-Hayat - Al-Monitor

www.al-monitor.com/pulse/sources/alhayat

Al-Hayat, which means "Life", is a leading pan-Arab daily newspapers. It is *based in the UK, printed in London, Beirut, New York, and Riyadh*, and is popular…

Al-Hayat has nothing to do with Islaam and, rather, has a long history of being antagonistic to this faith.

Who could create such a sophisticated logo with all the necessary buzz words? Does anyone really believe this is the work of devout Muslims who are fighting for their faith? Mere thugs have a message to all the Muslim world? Then, too, it is available in a multitude of languages? This is a Zionist plot aimed at further destabilizing the Muslim for the benefit of Israeli schemes.

Note the typical ISIS brute, in this case the Kosovo-originating terrorist known as Abu Abdullah. See is high-quality uniform and new-appearing gun. Note the heavy armor, including a tank, in the background. Where did the terrorist get this other than from the Zionist cabal?

He talks in riddles. Abu Abdullah is merely a murderous thug. There is nothing 'religious' about him.

The same camera-friendly terrorist is seen here, after unleashing his murderous knife and making threats against all who would not submit before him. His purpose is to create fear in the population, death-squad-like, in order that they would be readily conquered.

Please pr
for the safe
and protection
of these men.

SPECIAL CYBERPUNK ISSUE

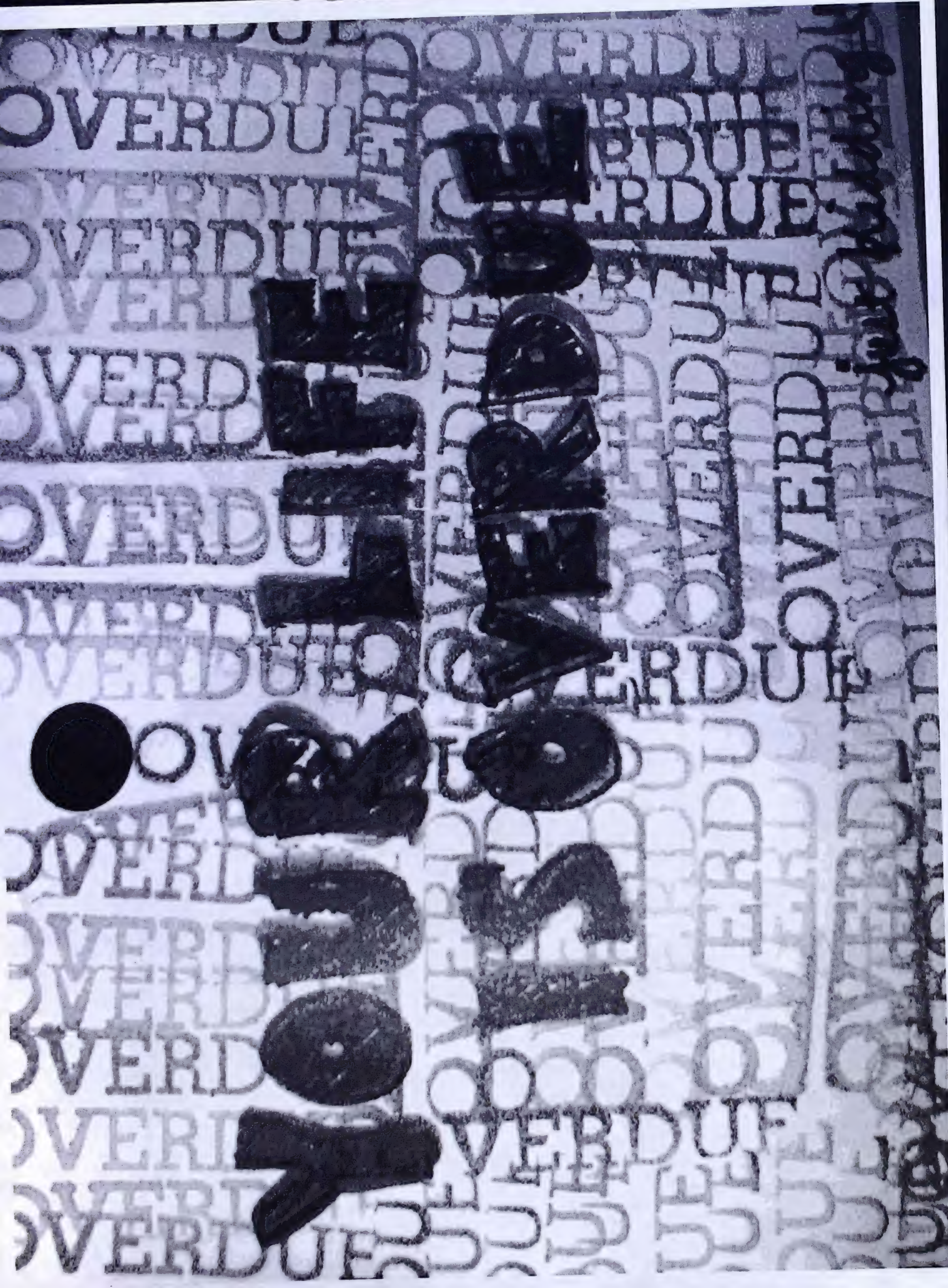
NO. 8

ADULTS ONLY
$2.50

Cherry

SHE'S MY BEST FRIEND!

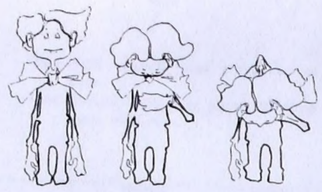
WELL, AT LEAST WE'RE NOT IN KANSAS!


OVERDUE

THE DREADFUL FATE OF THE LITTLE BOY WHO PLAYED "HOOKEY"

THE THREE MAGI

MEMBERS OF THE CHICAGO CAT CLUB



HOW TO SPEAK A PIECE WITH PROPER GESTURE AND EXPRESSION

FOR COMMENCEMENT EXERCISES

Woodman, spare that tree!

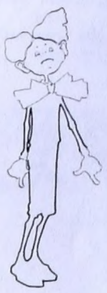
Touch not a single bough!

In youth it sheltered me,

And I'll protect it now.

'Twas my forefather's hand

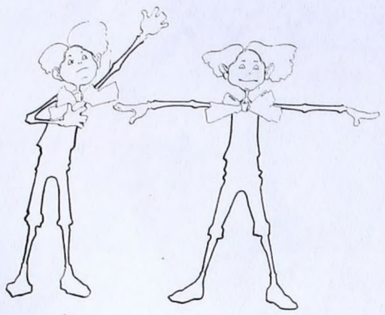
That placed it near his cot;



There, woodman, let it stand;

Thy ax shall harm it not!

That old familiar tree,



Whose glory and renown

Are spread o'er land and sea,

And wouldst thou hew it down?

Woodman, forbear thy stroke!

Cut not its earth-bound ties;

Oh, spare that aged oak,

Now towering to the skies!

When but an idle boy,

I sought its grateful shade;

In all their gushing joy,

Here, too, my sisters played.

My mother kissed me here;

My father pressed my hand—

Forgive this foolish tear,

But let that old oak stand!

My heart-strings round thee cling,

Close as thy bark, old friend!

Here shall the wild bird sing,

And still thy branches bend.

Old tree! the storm still brave!

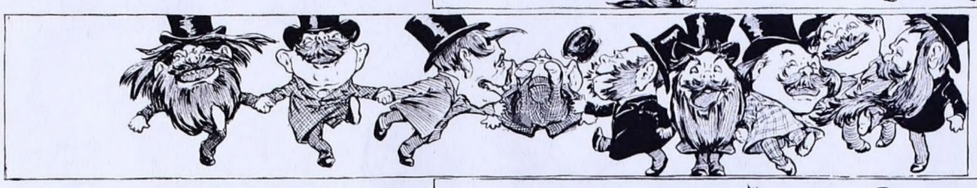
And, woodman, leave the spot!

While I've a hand to save,

Thy ax shall harm it not.

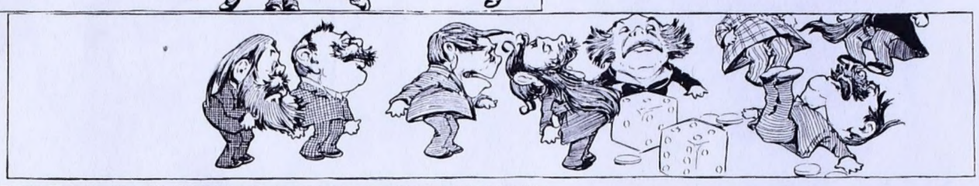
THE TEN LITTLE COUNCIL BOYS

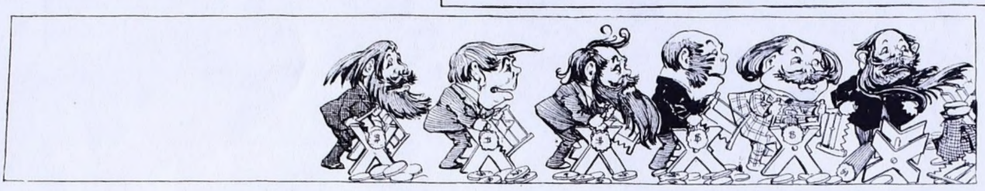
Ten little council boys going out to dine;
One choked himself on plums and then there were nine.



Nine little council boys stayed out very late;
One never did get home and then there were eight.

Eight little council boys shooting seven-eleven;
One sprung some loaded dice and then there were seven.





Seven little council boys sawed wood and said nix;
One sawed his pull in two and then there were six.

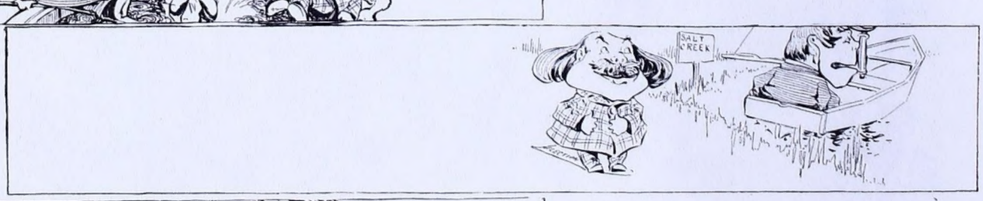
Six little council boys kept a gambling dive;
The grand jury nabbed one and then there were five.

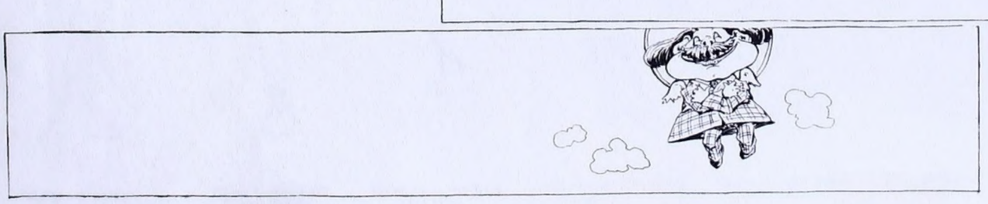
Five little council boys shouting for the floor;
One worked his jaw loose and then there were four.

Four little council boys at a ward-building bee;
One got in another's ward and then there were three.

Three little council boys all in a stew;
One tumbled in the soup and then there were two.

Two little council boys for re-election run;
One took the Salt Creek route and then there was one.





One little council boy living all alone;
He got honest and then there was none.